

## Predictions from Galaxy Modeling

Joel R. Primack

(Email: joel@scipp.ucsc.edu)

Physics Department, University of California, Santa Cruz, California

I plan to present new results in collaboration with Rachel Somerville extending our semi-analytic modeling of galaxies (*Somerville and Primack*, 1999; *Somerville et al.*, 2001) into the mid and far IR, as well as some exciting new dissertation research that two of my UCSC grad students are doing on hydro simulations of galaxy interactions including radiative transfer and dust modeling (*Cox et al.*, 2004; and additional papers in preparation). The images of interacting galaxies resulting from these simulations are being compared with galaxy images in various spectral bands using new galaxy morphology measures (*Lotz et al.*, 2004).

- 
- [a] Somerville, Rachel S., and Primack, Joel R., Semi-Analytic Modeling of Galaxy Formation: The Local Universe, *MNRAS*, **310**, 1087–1110, 1999.
  - [b] Somerville, Rachel S., Primack, Joel R., and Faber, S.M., The Nature of High-Redshift Galaxies, *MNRAS*, **320**, 504–528, 2001.
  - [c] Cox, T.J., Primack, Joel R., Jonsson, Patrik, and Somerville, Rachel, Generating Hot Gas in Simulations of Disk Galaxy Major Mergers, *ApJ*, **607**, L87–L90, 2004.
  - [d] Lotz, Jennifer M., Primack, Joel, and Madau, Piero, A New Nonparametric Approach to Galaxy Morphological Classification, *AJ*, **128**, 163–182, 2004.